
Industry and Occupational Projections for New Jersey: 2008-2018

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The Division of Labor Market and Demographic Research has developed a set of long-term industry and occupational employment projections for New Jersey for the year 2018. These projections follow the national projections which were developed by the Bureau of Labor Statistics (BLS) and replace the 2006-2016 industry and occupational employment projections.

The employment projections developed through this process are an extrapolation of longer-term and more current demographic and economic trends into the future. The projections essentially show what the New Jersey economy will look like at some future time if present trends continue. These projections are not goal or policy driven. Future projections will, of course, be altered by any policy changes or initiatives which alter current and future business practices and employment trends.

This article presents highlights of the New Jersey statewide industry and occupational employment projections for 2018. More detailed industry and occupational employment projections data are available on the Office of Labor Planning and Analysis (LPA) Web site: http://lwd.dol.state.nj.us/labor/lpa/employ/emp_index.html

A summary of the methodology and the issues related to the development of these projections is presented at the end of this article.

Slow Job Growth in the New Millenium

The post-2000 era has been marked by a historically stagnant job market in both New Jersey and the nation. A so-called “jobless recovery” has been sandwiched by two recessions, the latter of which far more damaging than the former. For the first time since records have been maintained, New Jersey has exited a decade with fewer jobs than it started, with nearly 103,000 jobs lost from 2000 to 2009. Offsetting some years of moderate growth in the middle of the decade, New Jersey lost roughly 160,000 in 2009 alone.

Dating back to the mid-1940s, the moving average for employment growth in New Jersey has hovered around 40,000 jobs per year, or roughly 1.0 percent annual growth based on current employment levels. Until recently, over longer periods of time, this average has held true. However, with the most recent recession, and given the economic environment, these expectations must be tempered.

Over the longer term, the federal Bureau of Labor Statistics (BLS) is projecting slower national nonfarm payroll employment growth. An expected slowdown in labor force growth, the continuing pressure to minimize cost and the adoption of labor saving and productivity enhancing innovations and technologies in many industries are some important factors expected to slow future employment growth.

Overview

Table 1 shows New Jersey's projected employment growth by major industry sector over the 2008-2018 period. Over this time, New Jersey is projected to add 124,650 jobs while averaging growth of nearly 12,500 per year (0.3% per annum).

Table 1

Estimated and Projected Employment by Industry Supersector: New Jersey, 2008-2018					
NAICS Supersector	Actual	Projected	Change 2008-2018		
	2008	2018	Number	Annual Growth Rate (%)	Total Growth Rate (%)
Total Nonfarm	4,058,300	4,182,950	124,650	0.3	3.1
Goods Producing	465,300	410,900	-54,400	-1.2	-11.7
Natural Resources and Mining	1,700	1,800	100	0.6	5.9
Construction	164,800	173,600	8,800	0.5	5.3
Manufacturing	298,900	235,450	-63,450	-2.4	-21.2
Service-Providing	3,592,900	3,772,100	179,200	0.5	5.0
Trade, Transportation & Utilities	864,000	867,450	3,450	0.0	0.4
Information	92,400	79,900	-12,500	-1.4	-13.5
Financial Activities	269,300	281,750	12,450	0.5	4.6
Professional and Business Services	614,900	654,050	39,150	0.6	6.4
Educational and Health Services	592,000	679,900	87,900	1.4	14.8
Leisure and Hospitality	344,200	365,950	21,750	0.6	6.3
Other Services	165,000	178,300	13,300	0.8	8.1
Government	651,200	664,850	13,650	0.2	2.1

Note: Employment data are rounded to the nearest hundred. Percentages and percent changes are based on unrounded data.

Source: New Jersey Department of Labor and Workforce Development

In both the nation and in New Jersey, the long-term trend of employment growth will continue to largely occur in the service-providing industries. Service-providing industries are expected to add 179,200 jobs to New Jersey's payrolls while the goods-producing industries are expected to decline by 54,400 jobs. The employment decline in goods-producing industries is the result of continuing declines in manufacturing more than offsetting employment growth in the smaller construction industry.

Goods-Producing Industries

Manufacturing payrolls in New Jersey are projected to decline by 63,450 from 2008 to 2018, an annual average decline of 2.4 percent. Nationally, BLS projects that the manufacturing sector will contract by only 0.9 percent per year over the same ten years. From 1990 through 2008, employment in New Jersey's manufacturing sector has declined at an annual rate of 3.1 percent. Since 2000, the rate of jobs losses has accelerated, with manufacturing job losses averaging 4.2 percent annually.

Projected job losses in manufacturing continue to be widespread. Chemical manufacturing, the state's largest manufacturing industry with employment of 65,300 in 2008, is expected to contract by 8,700 jobs. Computer and electronics, machinery, and printing and related support manufacturing industries are all projected to decline by at least 5,000 jobs.

Over the 2008-2018 period, employment growth in construction is projected to average 0.5 percent per year, slightly faster than the state's growth rate of 0.3 percent. This rate is in line with the 0.6 percent this industry has increased from 1990-2008. Perhaps the hardest hit industry during the current recession and real estate bubble, construction payrolls declined considerably in 2009. However, over the longer term, employment is expected to maintain historical trends and continue to grow steadily over the ten-year cycle.

Growth in Service-Providing Jobs

Employment growth in service-providing industries is projected to average 0.5 percent annually through 2018, a rate faster than the state's overall growth rate. Among the service-providing industries, three industry sectors, health care and social assistance, professional and business services and leisure and hospitality, are expected to account for most of the job growth. In fact, these three sectors alone are projected to account for more job growth, 137,600, than the net gains of the state as a whole. The most new jobs, 76,700, will be added in health care and social assistance, followed by professional and business services, which will add 39,150. Leisure and hospitality services will add another 21,750.

The Fast Growth Industries

Table 2 summarizes employment growth in the three industry sectors which are projected to account for the greatest job growth from 2008-2018 (health care and social assistance, professional and business services and leisure and hospitality).

The health care and social assistance industry will experience the fastest growth, averaging 1.4 percent annually, while adding 76,700 jobs. The reasons for the significant growth in health care employment are well documented: an aging baby boom population, increasing life expectancies combined with continuing advances in health care technology, and increased health care awareness.

Health care and social assistance has been the primary source of employment growth for both the nation and New Jersey over the last several years. For example, over the 1990-2009 period, the industry has accounted for 203,500 of New Jersey's 256,600 net employment gain, a staggering 79.3 percent. From 2000 to 2009, while the state as a whole has lost 102,800 net jobs, the health care industry has gained 88,700. The stability of this industry also provides a cushion against the large swings in employment that occur in more cyclically sensitive industries, most recently evident with the recession that began in late 2008.

Professional and business services is expected to add 39,150 jobs while growing at double the pace of statewide employment as a whole (+0.6%). Professional, scientific and technical services is projected to add the most jobs in this sector, 22,300 or 0.7 percent.

Table 2

Estimated and Projected Employment for High Growth Industry Sectors: New Jersey, 2008-2018						
NAICS Title	Actual 2008		Projected 2018		Change 2008-2018	
	Number	Percent	Number	Percent	Number	Annual Growth Rate (%)
Total Nonfarm	4,058,300	100.0	4,182,950	100.0	124,650	0.3
Health Care and Social Assistance	500,500	12.3	577,200	13.8	76,700	1.4
Ambulatory Health Care Services	183,100	4.5	221,950	5.3	38,850	1.9
Hospitals	156,300	3.9	157,650	3.8	1,350	0.1
Nursing and Residential Care Facilities	84,200	2.1	100,100	2.4	15,900	1.7
Social Assistance	77,000	1.9	97,500	2.3	20,500	2.4
Professional and Business Services	614,900	15.2	654,050	15.6	39,150	0.6
Professional, Scientific, & Technical Services	290,700	7.2	313,000	7.5	22,300	0.7
Management of Companies and Enterprises	74,900	1.8	78,850	1.9	3,950	0.5
Adm/Support, Waste Mgt/Remediation Svcs.	249,400	6.1	262,200	6.3	12,800	0.5
Leisure and Hospitality	344,200	8.5	365,950	8.7	21,750	0.6
Arts, Entertainment, and Recreation	54,700	1.3	60,400	1.4	5,700	1.0
Accommodation and Food Services	289,400	7.1	305,550	7.3	16,150	0.5

Note: Employment data are rounded to the nearest hundred. Percentages and percent changes are based on unrounded data.

Source: New Jersey Department of Labor and Workforce Development

The professional, scientific and technical services industries tend to have very high training and educational requirements for entry, and consequently tend to pay higher salaries. Management, scientific and technical consulting services is projected to add the most jobs, 5,900, and have the fastest growth, 1.5 percent, of this group. Computer systems design and related services will add another 4,750 jobs, while growing by 0.7 percent. All industries in this group are projected to grow faster than the state average of 0.3 percent.

Management of companies and enterprises, the smallest industry in the professional and business services sector, is projected to experience moderate growth of 0.5 percent, adding 3,950 jobs. Jobs in this industry also tend to pay well and have very high training and educational requirements.

The administrative support and waste management and remediation services industry is also projected to increase modestly by 0.5 percent, and will add 12,800 jobs by 2018. Nearly one third of these new jobs, 4,200, will occur in the services to buildings and dwellings industry. Employment services, the largest industry in this group, is projected to add 3,450 jobs while growing at a rate of 0.4 percent. Employment in this industry soared during the 1990s to a peak of 105,600 jobs, exceeding annual rates of 6.0 percent. Growth has since slowed dramatically, and actually declined by 7.0 and 12.5 percent in 2008 and 2009, respectively.

Leisure and hospitality is projected to add 21,750 jobs from 2008 to 2018. This sector has added 32,500 from 2000 to 2009; however, annual growth has slowed on a percentage basis since 2004, and actually declined by 1.8 percent during 2009 due to the recession. While a rebound is expected, the years of one-plus percent annual growth may not return in New Jersey for this industry.

Within leisure and hospitality, the fastest projected growth is in the relatively small arts, entertainment and recreation component, which is expected to increase by an average of 1.0

percent per year while adding 5,700 jobs. Nearly all of this growth (+5,000 jobs) is projected to occur in the amusement, gambling and recreation industries. Employment in this segment has nearly doubled in size to 43,300 since 1990, and has averaged nearly 3.0 percent growth annually since 2000.

The accommodation and food services industries account for the majority of employment within the leisure and hospitality sector, with employment of 289,400 in 2008, and projected growth of 16,150, or 0.5 annually, by 2018. The largest industry is full-service restaurants, which is projected to add 9,700 jobs to reach employment of 110,500 by 2018.

The casino hotel industry, located solely in Atlantic City, is an extremely important component of the leisure and hospitality sector, and to New Jersey's economy. Employment in this industry reached its peak in 1998 at 47,700 jobs. Since then, and despite substantial financial investment, employment has declined in nine of the past eleven years to a 2008 level of 38,100. Further contraction is projected, to 34,000 or a decline of 1.2 percent, through 2018.

Increased efficiencies from gaming industry mergers and other management restructurings, the emergence of labor saving technologies such as coinless slot machines and the closing of the Sands hotel casino help explain the employment decline in the face of expanded hotel and gaming operations through the mid-2000s. Looking forward, the recession-induced changes in consumer discretionary spending and increased gaming competition from neighboring and nearby states, such as Pennsylvania, New York, Delaware, Maryland and Connecticut, are factors that will limit the potential for growth.

The Slower Growth/No Growth Industries

The first decade of the new millennium has been one of slow or little growth for many industries, both in New Jersey and the nation. Continuing declines in 2009 will have many industries struggling to get back to their 2008 levels by 2018.

Wholesale trade: Strong growth during the middle to late 1990s led to an employment peak of 241,900 in 2001. Since 2003, however, employment has remained essentially flat. This trend is projected to continue, as only 550 jobs are expected to be added by 2018.

Retail trade: This industry is still a major component of New Jersey's economy and one of the largest by employment with 457,500 jobs in 2008. However, retail trade is only projected to add 2,050 jobs by 2018, an increase of less than 0.1 percent per year. Nationally, the industry is projected to average growth of 0.4 percent annually, which marks a slow down by historical standards. Possible explanations for the slower growth in retail trade are increased internet sales and in-store labor saving devices such as automated check-out machines.

Utilities: This very small industry, with employment of only 12,000 in 2008, has been in a long-term decline. Since 1990, 7,200 jobs have been lost, an average decline of 2.5 percent per year. Although in the longer term the downward trend is projected to continue, it should slow to 1.2 percent per year. There also remains the possibility that the employment trend may change as the trend toward "green energy" continues to the forefront.

Information: While this industry has been trending down since 1990 (earliest data available), the decline has intensified since 2000, dropping at an annual rate of 4.0 percent through

2008. These declines are largely due to employment losses in wired telecommunications, and more recently printed media such as newspapers. Through 2018, the information industry is projected to decline by 1.2 percent, while losing an additional 12,500 jobs.

Government: Employment growth in the public sector is projected to average only 0.2 percent per year. Projected public sector growth is slower than the projected overall growth rate, 0.3 percent, which is reasonable given the severe fiscal restraints which will continue to confront the public sector for the foreseeable future. Over the 1990-2008 period, employment in both the public and private sector both grew at an annual rate of 0.6 percent.

Within the public sector, federal government employment is expected to decline by 1.3 percent, driven by continued declines with the United States postal service. State and local government employment are projected to grow at annual rates of 0.2 and 0.4, respectively.

Since 2000, growth in public sector employment significantly outpaced gains in both total nonfarm and private sector payrolls. The overall statewide growth rate was only 0.2 percent while private sector jobholding has remained flat. The public sector has grown on average by 1.2 percent per year.

Occupational Employment Projections

From 2008 to 2018, employment growth by occupation will increase by 120,400 net jobs, as shown in Table 3. Employment growth over the ten year period will average 12,040 per year. Six of the nine major occupational groups shown in Table 3 are expected to experience growth, while the other three will decline. The six expanding groups will together add 163,050 jobs. The three declining groups, office and administrative support, production, and transportation and material moving, are projected to decline by a total of 42,650 jobs.

Professional and service occupations are projected to continue to provide the bulk of job opportunities, adding 142,300 jobs combined. These two groups, which accounted for 41.1 percent of all jobs in 2008, are expected to increase their share to 43.2 percent by 2018. Professional and related occupations tend to be higher paying jobs which require higher educational and training. Service occupations tend to be lower paying jobs with more modest expectations of education and training.

The remaining major occupational groups which are projected to experience growth will account for only 20,750 jobs. Management, business and financial occupations are projected to increase by 12,250, and sales and related occupations are expected to grow by 4,350. Both are projected to grow at a rate slower than overall total employment. Following are highlights of the occupational projections for selected major occupational groups.

Management, Business and Financial Occupations: This group, with a 2008 employment level of 500,750, is projected to grow by only 2.4 percent while adding 12,250 jobs. All of the growth, 13,100 jobs, is projected to occur among business and financial occupations, which will offset an expected loss of 850 jobs in management occupations. Accountants and auditors are projected to add the most jobs with 4,400 through 2018. Human resources professionals are expected to grow by 3,100. Each of these fields requires at least a bachelor's degree for entry, and also earns at least 20 percent more than the state's 2009 average salary of \$50,000.

Table 3

Estimated and Projected Employment by Major Occupational Group: New Jersey, 2008-2018							
Occupational Title	Actual 2008	Projected 2018	Change 2008-2018		Average Annual Job Openings		
			Number	Percent	Total	Growth	Replacement
Total, All Occupations	4,377,000	4,497,400	120,400	2.8	121,610	22,520	99,090
Management, Business and Financial Occupations	500,750	513,000	12,250	2.4	12,920	2,000	10,910
Professional Occupations	955,150	1,026,850	71,700	7.5	28,420	8,240	20,170
Service Occupations	845,250	915,850	70,600	8.4	28,760	7,640	21,110
Sales and Related Occupations	477,900	482,250	4,350	0.9	14,780	770	14,020
Office and Administrative Support Occupations	760,150	755,900	-4,250	-0.6	18,090	2,430	15,660
Construction and Extraction Occupations	160,000	161,850	1,850	1.2	3,160	380	2,780
Installation, Maintenance, and Repair Occupations	155,500	157,800	2,300	1.5	3,520	510	3,010
Production Occupations	210,400	180,300	-30,100	-14.3	3,990	70	3,920
Transportation and Material Moving Occupations	309,550	301,250	-8,300	-2.7	7,920	470	7,450

Note: Employment data are rounded to the nearest hundred. Percentages and percent changes are based on unrounded data.

Source: New Jersey Department of Labor and Workforce Development

Professional and Related Occupations: In 2008, this was New Jersey's largest major occupational group with 955,150 workers. With projected strong growth, it will add 71,700 jobs, the most of any group, to reach 1,026,850 by 2018. Nearly one in every four workers in 2018 is expected to be employed in a professional or related occupation.

Healthcare practitioners and technical occupations are expected to add 24,100 jobs and grow by 11.3 percent by 2018. Computer and mathematical occupations are expected to add 6,200 new jobs. Network systems and data communications analysts are expected to expand by 3,000 or 27.6 percent. Both of these groups are mainly comprised of occupations that earn significantly higher than average wages and have higher requirements for entry.

Service Occupations: Service occupations are projected to have the fastest growth among all major occupational groups and add 70,600 jobs by 2018. This group includes occupations from a wide range of services, including healthcare support, food preparation, building and grounds maintenance, protective services and personal services. Healthcare support occupations are expected to experience the fastest growth, 20.3 percent, and add the most jobs, 26,150, of this group. Food preparation and personal services occupations are also expected to expand significantly, each adding more than 20,000 jobs.

The majority of service occupations require only short-term or moderate-term on-the-job training. As a result, many are lower wage occupations. Employee turnover also tends to be high so these occupations generally have significant replacement demand.

Other Highlights

Office and administrative support occupations, New Jersey's third largest major occupational group in 2008, is projected to slightly decline, shedding 4,250 jobs by 2018. This is

reflective of the continued application of labor saving technologies and office automation. In 2018, this group will lag both professional and related and service occupations in employment, but will still number 755,900 jobs.

Construction and extraction occupations will experience slower than average growth, and will add 1,850 by 2018 as it struggles to recover the many jobs lost during the real estate crash and subsequent recession.

Production occupations are projected to continue their long-term trend and decline at the fastest rate among all occupational groups, losing 30,100 jobs by 2018. This, of course, is due to the continued deterioration of the manufacturing industry.

Job Openings: Employment growth, though important, is not necessarily the best indicator of the number of employment opportunities in an occupation. A better measure of the number of employment opportunities is the estimated total job openings. Total job openings consist of those resulting from actual growth and those resulting from replacement demand, which is typically a larger share of the total openings. The breakdown between job growth and replacement demand will vary by occupation.

Replacement demand results from the need to replace workers who leave an occupation for reasons such as retirement, death, to return to school, or to pursue employment opportunities in other occupations. Replacement demand is projected to account for nearly four out of every five employment opportunities through 2018.

As illustrated in Table 3, job openings in New Jersey by major occupational group will average 121,610 from 2008 to 2018. Unlike employment growth, which is concentrated in professional and service occupations, job openings are more evenly available across all major occupational groups. For example, while professional and service occupations together actually account for more net jobs than all groups combined, they will only account for 47.0 percent of annual job openings. Also, while office and administrative support occupations are projected to slightly decline, this group is expected to account for nearly 15.0 percent of total openings due to replacement demand. Similarly, production occupations, although declining, will still create nearly 4,000 job openings per year.

Employment Projections: Methodologies and Notes

These projections, which are neither predictions nor forecasts, reflect long-term economic and demographic trends. The projections were developed using basic time series and regression models. The industry employment projections use the nonfarm wage and salary employment definition of employment. The primary data input is an employment time series, by industry, which dates back to 1990. The analysts have the option of using shorter time periods if they will improve the quality of the projection. Other variables, such as population and national industry employment projections developed by BLS, are also used in the models. The national employment projections are an especially important input. The employment projections are coordinated with the New Jersey long-term population and labor force projections to ensure that the projection series are reasonable and consistent.

The methodology uses time series and regression models to develop preliminary employment projections by industry. A “final” industry projection is selected based on the statistical

properties of the model and the reasonableness of the projection. In evaluating the projections, forecast and other projections for New Jersey, developed by other organizations such as Rutgers Economic Advisory Service, were considered. The projections were also circulated to appropriate staff in the Division of Labor Market and Demographic research to review for reasonableness and consistency.

The employment projections developed through this process are an extrapolation of longer-term and more current demographic and economic trends in the future and essentially show what New Jersey's economy will look like at some future time if present trends continue. These projections are not goal or policy driven. Future projections will be altered by any changes or initiatives which alter current and future business and employment trends.

The projections are not intended to be precise point estimates of employment for each industry. The standard error of estimate and the quality of each projection will vary, depending on the stability and quality of the time series used to develop the projection.

The projections are valuable data for identifying future employment growth or decline. There is, however, no attempt to pinpoint the business cycle in these projections. That is, the projections are based on long-term trends. No attempt is made to determine whether the projected year is a peak year or a trough in the business cycle.

Within the context of these projections, employment refers to jobs, both full and part-time, and not the number of employed persons. Since some people work at more than one job, fewer persons may be employed than the number of estimated jobs in the projections. Projections are more reliable the broader an industry is defined, and less reliable as the industries become increasingly detailed.

The accuracy of the projections for individual industries may be subject to error due to unknown factors and changing trends and technologies that will affect the economy and the demand for labor over the projection period. For example, increases in productivity and new production technologies have significantly reduced the demand for manufacturing workers even though output in many of these industries remains high.

Additionally, movement of a large company into or out of the state or a large expansion of an existing company, which cannot be reliably predicted, could greatly alter employment levels within an industry and compromise the projections for that industry. As technology changes, the same efficiencies can be achieved with fewer workers. Many firms use retirement of their workforce as a means of downsizing operations over time.

Data Availability

Detailed statewide industry and occupational employment projections for year 2018, as well as population and labor force projections, are available on the Labor, Planning and Analysis (LPA) Web site at <http://www.nj.gov/labor/lra>. Questions or comments about the industry or occupational employment projections should be addressed to Jason Timian at 609-777-3635 (e-mail: jason.timian@dol.state.nj.us).